Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1-8. (Canceled)

9. (Currently amended)   A modem comprising:

a first input that ~~receives~~ operates to receive information from a first device that is utilizing the modem to communicate with a second device through a communication network;

a second input that ~~receives~~ operates to receive information from a the second device ~~with which the first device is communicating using the modem~~through the communication network; and

a recording module communicatively coupled to the first input and the second input that ~~causes~~ operates to cause input information arriving at one or both of the first input and the second input during real-time operation of the modem to be recorded for subsequent non-real-time analysis.

10. (Previously presented)   The modem of claim 9, further comprising a command input that receives modem control commands from the first device, and wherein the recording module further causes modem control commands arriving at the command input during real-time operation of the modem to be recorded for subsequent non-real-time analysis.

11. (Currently amended) The modem of claim 9, wherein the first device is a personal computer ~~system~~, and wherein the recording module ~~causes~~ operates to cause the input information arriving at the first input from the personal computer and arriving at the second input from the second device through the communication network, during real-time operation of the modem, to be recorded on a memory device of the personal computer ~~system~~.

12. (Currently amended) The modem of claim 9, wherein the recording module ~~causes~~ operates to cause input information arriving at the first input from the first device and arriving at the

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second input from the second device through the communication network to be communicated to a networked computer communicatively coupled to the modem over a-the communication network and recorded on a memory device of the networked computer.

13. (Previously presented)   The modem of claim 9, wherein the modem comprises an ADSL modem.

14-18. (Canceled)

19. (Previously presented)   A non-real-time playback environment for analyzing real-time performance of a modem, the environment comprising:

a memory comprising input information that was obtained from a modem during real-time operation of the modem; and

a playback module communicatively coupled to the memory, the playback module comprising a model of the modem that the playback module executes according to the input information in the memory.

20. (Currently amended) The non-real-time playback environment of claim 19, wherein the input information comprises:

information from a computer coupled to the modem; and

information from a device with which the computer is-was communicating through a communication network using the modem.

21. (Previously presented)   The non-real-time playback environment of claim 19, wherein the input information comprises data and modem control commands sent from a computer to the modem.

22. (Original) The non-real-time playback environment of claim 19, further comprising a debugging module communicatively coupled to the playback module that provides for controlling and observing the operation of the playback module.

23. (Currently amended) The non-real-time playback environment of claim 19, wherein the model of the modem comprises a bit-exact software model of the modem that, when executed,

produces results that are the same as an original modem that the bit-exact software model is modeling.

24. (Previously presented)   The non-real-time playback environment of claim 19, further comprising a computer communicatively coupled to the modem, and wherein the memory is a memory device of the computer.

25. (Original) The non-real-time playback environment of claim 24, wherein the computer comprises the playback module.

26. (Original) The non-real-time playback environment of claim 19, further comprising a networked computer communicatively coupled to the modem over a computer network, and wherein the networked computer comprises the memory.

27. (Currently amended) A method for analyzing real-time operation of a modem, the modem comprising a first input that receives information from a first device that is utilizing the modem to communicate with a second device through a communication network and a second input that receives information from the second device through the communication network, the method comprising:

> operating the modem in real-time to communicatively couple the first device and the second device, the modem comprising a recording module;

> while operating the modem in real-time, utilizing the recording module to cause the recording of input information input to at least the first and/or second inputs of the modem during real-time operation of the modem; and

> after operating the modem in real-time, executing a model of the modem, where the model is responsive to the recorded input information.

28. (Currently amended) The method of claim 27, wherein:

> the first device comprises a personal computer; and

> utilizing the recording module comprises utilizing the recording module to cause the recording of the input information input to at least the first and second inputs of the modem to a memory device of a the personal computer that is connected to the modem.

29. (Currently amended) The method of claim ~~27~~28, wherein[[:]]

> operating the modem comprises ~~running~~ driving the modem as an operating system device driver on ~~a~~ the personal computer ~~that is utilizing the modem; and~~ ~~utilizing the recording module comprises utilizing the recording module to cause the recording of the input information to a memory device of the computer.~~

30. (Currently amended) The method of claim 27, wherein:

> the second device is a computer; and
>
> utilizing the recording module comprises utilizing the recording module to cause the recording of the input information to a memory device of ~~a~~ the computer ~~that is communicatively coupled to the modem through a communication network~~.

31. (Currently amended) The method of claim 30, wherein utilizing the recording module of the modem comprises executing a recording application program on the computer.

32. (Currently amended) The method of claim 27, wherein:

> the first device is a personal computer; and
>
> utilizing the recording module to cause the recording of input information input to at least the first and/or second inputs of the modem comprises utilizing the recording module to cause the recording of input information comprising:
>
>> ~~input~~ data input to the first input from the personal computer, ~~and~~
>>
>> ~~input~~ commands input to a command input of the modem from ~~a~~ the personal computer; and
>>
>> ~~input~~ samples input to the second input from ~~a communication medium~~ the second device through the communication network.

33. (Currently amended) The method of claim 27, wherein executing the model of the modem comprises executing a software model of the modem, and the method further ~~comprising~~ comprises reading the recorded input information into ~~a~~ the software model ~~of the modem~~.

34. (Currently amended) The method of claim 27, wherein executing the model of the modem comprises executing a bit-exact software model of the modem.

35. (Currently amended) The method of claim 27, ~~further comprising debugging operation of the modem by, at least in part, observing execution of the model on the recorded input information~~wherein:

> the model of the modem comprises a software component that is the same as a software component of the modem; and
>
> executing the model of the modem comprises executing the software component.

36. (Currently amended) The method of claim ~~35~~27, wherein: ~~observing execution of the model comprises executing a debugging tool communicatively coupled to the model~~

> the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and
>
> executing the model of the modem comprises utilizing the hardware component.

37. (Previously presented)   The method of claim 27, further comprising debugging operation of the modem by, at least in part, observing execution of the model with the recorded input information in non-real-time.

38. (Previously presented)   The method of claim 27, wherein the modem comprises an ADSL modem.

39. (New)   The modem of claim 11, wherein the modem operates to cause the input information to be recorded on the memory device of the personal computer by, at least in part, being driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer.

40. (New)   The modem of claim 9, wherein the recording module is integrated into an integrated circuit of the modem.

41. (New)   The modem of claim 9, wherein the recording module operates to cause the input information arriving at the first input and the second input during real-time operation of the modem to be recorded in exactly the same sequence as the input information is received at the modem.

42. (New)   The non-real-time playback environment of claim 19, wherein the model of the modem comprises a bit-exact software model of the modem that exactly mimics the real-time operation of the modem.

43. (New)   The non-real-time playback environment of claim 19, wherein the playback module comprises playback software that, when executed by a processor, causes the reading of the input information into the model of the modem.

44. (New)   The non-real-time playback environment of claim 19, wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled.

45. (New)   The non-real-time playback environment of claim 19, wherein the model of the modem comprises a hardware component that is the same as a hardware component of the modem being modeled.

46. (New)   The non-real-time playback environment of claim 19, wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment.